(M-06) Immune response against intravitreally injected VNNV in European sea bass specimens

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Abstracts:

Viral diseases are responsible for many economic losses in modern aquaculture producing high mortalities. The viral nervous necrosis virus (VNNV), a single stranded RNA virus, produces the viral encephalopathy and retinopathy (VER) disease that is considered one of the most serious viral diseases in marine aquaculture. The virus mainly affects the central nervous system provoking necrosis and vacuolation of the cells of the spinal cord, brain and retina. Although some studies localized VNNV in the inner nuclear cell layer and ganglion layer adjacent to the circumferential germinal zone at the ciliary margin towards the iris, no studies deal with how the virus affects the vision function and whether the immune response is orchestrated in the retina. Thus, we intravitreally infected healthy specimens of European sea bass (*Dicentrarchuslabrax*) with VNNV and analysed the pattern of expression of relevant immune-related genes after 1, 4, 24, 72 h and 7days. In addition, eyes were extracted, and its retinas were dissected and processed for transmission-electron-microscopy study. From the first day, structural changes were found in the retina. The more relevant changes observed were swollen cone pedicles (hydropic degeneration), on the third day and a diffuse vacuolation in the inner plexiform layer, concurrent with disrupted myelin sheaths, in the optic nerve fibers layer.